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CONTENTS

ABSTRACTS

Xenia in Maize . . . . A. E. WALLER
Homopterous Studies, Part I, Part II . E. S. COGAN
Inheritance of Baldness . . . . DOROTHY OSBORN
The Epibranchial Placodes of Squalus Acanthias C. I. REED
Notes on Some Spring Birds of La Plata . R. F. HUSSEY
Summary on "The Development of the Pulmonary Circulation in the Chick" . T. L. SQUIER
Beta Chapter . . E. W. SINK, AND HAROLD CUMMINS

EDITORIALS .. PROGRESS .. ALUMNI NEWS

Abstracts of Scientific Contributions by Members of Phi Sigma.

Xenia in Maize. A. E. Waller, Alpha.
(Amer. Botanist, Vol. XXII, No. 2, pp. 40-45.)

For the purpose of experimentally demonstrating xenia, the silks of one side of an ear of white corn were divided and pollinated with pollen from a variety containing blue in the endosperm. The effect of the foreign pollen appears at once in the newly formed grains since the endosperm is a fusion product as well as the embryo. Xenia is the normal expression of dominant determiners capable of expressing themselves in the endosperm. This is brought out in the photograph which shows a definite area of the grain of the expected color in that portion of the ear reached by those silks which are separated and pollinated with foreign pollen.

Homopterous Studies. Part I.

Contributions Towards Our Knowledge of the Hermoptera of South Africa. E. S. Cogan, Alpha.
(Ohio Jour. of Sci., Vol. XVI, No. 5, pp. 161-200.)

Thirty-eight forms form the family Cercopidae and the super-family Jassoideae were the homopterous insects studied in this paper. Detailed generic descriptions are given and in some cases the author has made complete redescriptions. A number of drawings of new species are presented to supplement these. A historical account of work done on South African Homoptera, together with economic and ecologic notes are added.

Part II.

Morphological Studies of the Superfamily Jassoideae.

(O. Jour. of Sci., Vol. XVI, No. 7, pp. 299-323.)

The Jassoideae can be homologized with the homopterous families. The head and mouth parts are fundamentally similar in both the Jassids and the Cicads. There is a well developed nervous system which is almost entirely cephalo-thoracic. The digestive system agrees with other Auchenorrhynchous Homoptera in the development of a food reservoir. In general, the plan and morphology of the internal organs follows that of a generalized Hemipteron, and the various modifications which occur in the structure are just as likely to be specific as well as generic. In this second paper, the author has carried into detail morphological studies made possible by the careful descriptive work of the preceding part.

Inheritance of Baldness.

Dorothy Osborn, Alpha.

(Jour. of Heredity, Vol. VII, No. 8, pp. 347-355. 5 charts, 5 photographs.)

Baldness is a sex limited trait, being inherited as a dominant character by sons from the father. It may be transmitted thru the mother tho she is not bald. In women, baldness behaves as a recessive, only appearing when inherited from both parents. Heredity as a cause of baldness explains why healthy individuals are bald, why it is common in men and exceptional in women, and why it frequently takes the form of a pattern. The other theories that have been advanced, such as diseases of the scalp or pressure on the scalp from tight hats do not agree as to the cause of baldness and none of them explain completely. Congenital baldness and pattern baldness are distinguished.

lung area of similarly injected chick embryos, the following conclusions were reached concerning the development of the pulmonary circulation.

The pulmonary circuit is complete in the 72 hour chick tho not in its definite form, and the blood must flow thru the pulmonary system at a very early stage, altho, owing to a relative resistance in this and the general systemic circulation, the amount passing thru the lungs is undoubtedly small.

The primitive gut is surrounded by a network of capillaries and it seems probable that as the lung anlage pushes out from the gut, a portion of the surrounding capillary plexus would be carried with it. From such an indifferent plexus, the pulmonary vein may be assumed to be the survival of a pathway rendered permanent in accordance with the mechanical principle that those vessels in which the blood is strong become permanent, whereas, those in which it is weak atrophy and eventually disappear. The numerous early connections between the pulmonary and systemic systems seems to harmonize with this view. In the 96 hour embryo, most of such connections have been lost, but in the 72 hour chick, they are very evident.

Accordingly then, the pulmonary vein in the chick could be regarded as complete from the beginning as representing the sole survivor of the numerous primitive vessels that drain the lung region surrounding the lung anlage.

Beta Chapter.

E. W. Sink and Harold Cummins.

Since the last issue of the Biologist, the Natural Science Club of the University of Michigan has become affiliated with Phi Sigma Society as its Beta Chapter. It is thought desirable to have in print for future reference, the early history of the former organization.

The development of the Natural Science Club was initiated in the year 1910-1911 from a nucleus of four Assistants in the Zoology Department. H. B. Baker, G. M. Curtis, E. W. Sink and O. J. Wenzel often met in each other's rooms to talk over topics of current interest and theories of evolution. Sometimes these discussions were greatly prolonged and so hindered the one who happened to be host. For this reason, it was deemed best to set a definite time for these friendly "visits." One evening each week was given to this purpose and although there was no formal program, much good was derived and valuable time really economized. The last meeting of the year consisted of a field trip up the Huron River, a tradition which is still maintained.

During the year 1911-1912, the following were members of this unnamed club: H. B. Baker, G. M. Curtis, S. B. Fracker, R. Glaser, E. Griest, Holsinger, E. W. Sink, and O. J. Wenzel, all of whom were Zoologists. They met each Thursday evening in the little library adjoining the biology laboratory of the old south wing. At first, members took turns reading selections from Bergson's Creative Evolution. Occasionally, scientific articles were read, and at times short fiction stories proved of interest.

The year 1912-1913 showed signs of progress and deeper interest in such a club. H. B. Baker, B. A. Barbour, Harold Cummins, F. M. Gaige, Green, E. Griest, Ettinger, B. E. Quick, E. W. Sink, A. D. Tucker and Wenzel were members. A broading out was indicated by the addition and Green and Quick, neither of whom were Zoologists. As yet, there was no organization, but all the active members took part in the program and administration. Early in the year, a list of topics, both scientific and general, was provided for by the members. A single topic was written on a slip of paper and placed in separate envelopes and kept for future use. During a meeting, several of these topics were read and brought up for general discussion. The member who suggested the topic under consideration acted as leader and directed the general trend of the conversation and informed the members when he thought the subject had been treaded sufficiently. In this way, a variety of subjects was assured and at the same time, opportunity was afforded to all the members to take part in the informal discussions. Examples of such topics are: Which is more worth while, research or successful teaching? What is the original organ of sense and what structures have evolved from it? Is man the highest (final) product of evolution? If not, what factors must play a part in further development?

After a few meetings in 1913-1914, it was evident that organization was necessary. At a meeting on March 19, 1914, suggestions for a more definite plan of procedure were outlined and as a result a constitution was adopted on April 30, 1914. Since the Club had started within the Zoology Department, and since assistants in this department had been ex-officio members, it was agreed to call the organization the "Zoological Assistants' Club." The following were the charter members: E. W. Sink, President; Harold Cummins, Secretary; W. K. Bowen, Herbert Dieterle, F. M. Gaige, E. B. Mains, N. E. Pinney, B. E. Quick and John Shambaugh. Later Adrian Worun, D. A. Tucker and Parker Heath were elected.

The program for this year consisted of original papers by the different members. Examples of such papers are: On the Physiology of the Kidney, Vegetable Mitosis, The University of Michigan, Walker Expedition to South America, Some Points in the Development of Human Urinogenital System.

For the year 1914-1915, Harold Cummins was elected President and E. B. Mains was elected Secretary, later succeeded by W. K. Bowen. In addition to these officers, the membership consisted of the following: H. E. Bozer, F. B. Cotner, C. R. Crisswell, C. C. Delavan, H. R. Flint, H. C. Fortner, F. M. Gaige, E. A. Gallup, S. R. Gardner, H. S. Liddell, T. S. Muffitt, N. O. Nicholson, F. O. Novy, J. S. Rogers, E. W. Sink, T. L. Squier anr A. A. Worun. As this membership included several from departments other than the Zology Department, the title of the Zoological Assistants' Club became rather inappropriate, and on October 29, 1914, it was unanimously agreed to change the name to that of the Natural Science Club. Some of the papers given during the year are: Forestry Reconnaisance, Priest River Experimental Station Work, The Effect of Tropical Light on White Men, The Distillation of Wood, The Relation of Forest Fires on Local Distribution, and The Scientific Achievements of Pasteur.

For the year 1915-1916, E. A. Gallup was elected President, and Harold Cummins was elected Secretary. In addition the membership included: W. K. Bowen, H. E. Bozer, W. B. Brotherton, F. B. Cotner, P. D. Covey, H. A. Dennee, R. H. Dott, H. C. Fortner, F. M. Gaige, R. F. Hussey, T. Koeltz, W. F. Kroener, Carl La Rue, H. S. Liddell, E. B. Mains, J. S. Rogers, Kent Ruble, C. P. Russell, H. B. Sherman, E. W. Sink, and T. L. Squier.

Papers given during the year are as follows: The Significance of Certain Internal Conditions of the Organism in Organic Evolution, An Invertebrate Census of the Thirs Sister Lake, Michigan's Wood Lot Surveys, Hernia, United States' Forest Physicians, The Game Market of Today, Michigan Biological Survey, Relation of Certain Fungi to Their Hosts, Bird Migration, Water-borne Diseases, A Review of Netchnikoff's Optimistic Essays, Some Astronomical Facts of Popular Interest, Evolution of the Cell, Cause of Sterility in the Mule, Ethics in the Scientific Profession, Regeneration and Death, Music and Dancing in Nature, The Gipsy Moth, Wing Venation as a Basis of Classification, Light as a Factor in Tree Growth, Play, Memory and Illusion, Tropical Diseases, Mitochondria in the Male Germ Cells of Chorthippes, The Economic Importance of Woodpeckers, The Physical Basis of Heredity, The Courtship of Ducks, The Seasonal Decline of Bird Song, Habits of the Cowbirds, History of the Discovery of Sexuality in Plants and Forests of Alaska. The last meeting of the Natural Science Club was held on June 3, 1916, in connection with a field day trip to the University Forestry Farm. At this time the Club was formally installed by D. B. Whelan of The Michigan Agricultural College, as the Beta Chapter of Phi Sigma Society. The following are the Charter members: R. F. Hussey, President; T. L. Squier, Vice President; H. C. Fortner, Secretary Treasurer; E. W. Sink, Associate Editor; H. S. Liddell, Historian; R. E. Johnson, Sergeant-at-Arms; W. B. Brotherton, F. B. Cotner, Harold Cummins, E. A. Gallup, Kent Ruble and H. B. Sherman.

The first initiation of the Beta Chapter of the Phi Sigma Society was held in Room Z231 of the Natural Science Building of the University of Michigan on the evening of December 14. The following nine men were admitted to membership:

M. G. Becker, A. H. Eggerth, A.M., Lynne Hoag, B.S., C. A. Ludwig, A.B., F. O. Novy, P. H. Piper, B.S., Ernest Reed, J. S. Rogers, A.B., A.M., C. E. Roser, C. P. Russell, A.B.

The brief initiation ceremony was conducted by the President of Beta Chapter, Mr. R. F. Hussey, and was followed by the presentation of a paper by Mr. Squier on "The Pulmonary Circulation of the Chick," reviewed elsewhere in this issue of "The Biologist."

Editorials.

First of all the editor wishes to extend an apology to our subscribers for the lateness of this issue of The Biologist, but feels that too much blame should not be accorded the editorial force since the work must be done during spare hours and hence, cannot always be done as promptly as is to be desired.

Progress!

Now that the first school year of Phi Sigma's existence as a national society is nearly half over it might be well to give a brief space to a review of progress since the society first grew beyond the limits of the local institution and became the forerunner of what we hope one day to recognize as the strongest organization of its kind in the country.

When Alpha Chapter first began a campaign of publicity, the existence of the society was not known or recognized outside of the Ohio State University, except to the small group of alumni who had gone out the previous year.

One of the first results of this compaign was the establishment of the Natural Science Club of the University of Michigan as Beta Chapter. A review of the history of this organization which appears elsewhere in this issue will convince one that this was a decidedly progressive step and one which we do not feel we shall ever regret.

Shortly after this a group of ten men in the North Dakota Agricultural College asked for a charter which was granted after a brief period of investigation, the results of which seemed to justify this step. They were then certain that there would be a sufficient number of their members return to school this year to insure continuity, but an unfortunate train of events reduced the number of those returning to school to four and consequently the outlook was not at all encouraging. For this reason, Gamma Chapter has not been installed for it has seemed advisable to wait until it is determined whether these four men can revive the spirit and interest sufficiently to make the Chapter a successful one.

It would seem advisable that the members of other chapters give to these men all possible encouragement and assistance for we do not want to be handicapped at the outset by the record of a dead chapter. It might be urged by critics that we were hasty in accepting this petition. In answer to this it may be said that such a combination of circumstances might easily arise with the strongest group so that we should aid instead of criticise. It is in the small growing schools where Phi Sigma can do the most good rather than in the larger schools where the status of research work among students is already beyond question.

During his period of service in the Department of Entomology in the University of Maine, at Orono, last year, Mr. Lane succeeded in arousing the interest of students in biological sciences in Phi Sigma. His work was carried on this year by Mr. Wiltberger who succeeded him and as a result the president will instruct Mr. Wiltberger to conduct the installation of Delta Chapter as soon as all preliminary arrangements can be completed.

The president is just now in receipt of a petition from a strong local honorary organization of the University of Denver, which will be submitted to the chapters for their consideration at an early date.

Other schools that may be considered as possible locations for chapters are, the University of California, where there is already a strong local honorary organization; Cornell University where Mr. Shadle is still trying to get together a sufficiently strong local organization to justify a petition; Iowa State Agricultural College at Ames, where Mr. Reese is working on the organization of a chapter; Michigan Agricultural College where Mr. Whelan is engaged in the same sort of effort. Mr. Stear has also promised to see what the prospects are at Illinois, as has also Mr. Cummins at Vanderbilt.

Quite recently a number of students in Bowdoin College have expressed considerable interest in the possibility of the establishment of a chapter there so that as time goes on, each new chapter means several new alumni who will go into other schools and tell the story of Phi Sigma and arouse interest there in the efforts of the pioneers and establish faith in the ultimate result. It is therefore, the duty of every alumnus of every chapter of Phi Sigma to do everything in his or her power to stimulate interest in the organization in other schools for it is only by extension to a large number of schools that we can hope to bring about the greatest benefits and accomplish the real purpose of the organization. But we should never let our zeal for extension overshadow the standards we have set and are trying to maintain lest we defeat the real purpose of our existence.

In this issue of The Biologist we have attempted to make the members of the different chapters acquainted with productive work of the members of other chapters and to this end abstracts of original articles are published in order that we may realize the many lines of endeavor of our members and appreciate more fully the possibilities of benefits to be derived from association with our co-workers in other lines of biology.

It is not impossible for every member to become a contributor to The Biologist for in so doing we can give to our fellow workers such information and many suggestions that may be of aid. But the publication cannot exist without the active support of the alumni as well as of the active members. It is therefore urged that each chapter strive to induce the alumni to subscribe to this organ for by this means only can we develop it to the state of perfection necessary to serve the national society to the fullest extent.

ALUMNI NEWS

Alpha Chapter

R. L. Mundhenk, D.V.M., '16, national secretary-treasurer of Phi Sigma, was elected to the position of instructor in Veterinary Pathology but has been absent since last July with the Ohio National Guard at El Paso, Texas.

E. S. Cogan, Ph.D., '16, was married on November 4 to Miss Hannah Madge Forgey at the home of the bride's parents in Ashland, Ky. They sailed shortly after for South Africa where Dr. Cogan will be Entomologist of Cape Colony and Professor of Entomology in Rhodes University. Dr. Cogan spent the past summer in government service, investigating the control of citrus canker in Florida.

C. C. Hugger, M.D., '16, is the proud father of a brand new baby girl.

E. L. Fox is specializing in rubber chemistry in the University of Akron. He expects to return to Ohio State in the second semester to complete the work for his A.B. degree.

F. E. Deeds, A.B., '16, is doing graduate work in public health.

C. A. Herson, D.VM., '16, is with the H. K. Mulford Co., with headquarters in Columbus.

W. C. Lane was obliged, on account of poor health, to give up his work as Instructor in Entomology at the University of Maine last year and is now at his home.

W. H. Mosier, B.Sc., '16, is Instructor in Horticulture at Ohio State.

H. E. Peebles, B.Sc., '16, is graduate assistant in Bacteriology and is also registered as a freshman in the medical school.

H. J. Reinhard is now in the experiment station at College Station, Texas, and is engaged in the investigation of the life history and control of the cabbage bug, Margantia histronica and the life history, habits, anatomy and control of the cow pea Weevil Bruchus quadrinaculatus.

S. J. Schilling is assistant in Bacteriology in Ohio State.

J. R. Stear, B.Sc., '16, is assistant in the Department of Entomology in the University of Illinois and is doing graduate work toward the degree of M.S.

C. K. Wildermuth is in the Department of Crop Physiology and Breeding Investigation of the Bureau of Plant Industry and is located at the government experiment station at Tempe, Ariz.

W. D. Will, B.Sc. in Agr., '16, is teaching in the high school at New Lexington, Ohio.

P. B. Wiltberger, B.Sc. in Agr., '16, was engaged during the past summer in the control of citrus canker and is now in the department of Entomology in the University of Maine where he is engaged in teaching Vertebrate Anatomy. He was recently honored with election to the University Research Club. Students in biology at that school have a biology day once a year when there is an exhibition given of all lines of biological work, for which an admission charge of ten cents is made. After defraying expenses the proceeds are used in defraying the expenses of some worthy student for a summer of work at Woods Hole. The idea is unique and might well be applied in other schools.

Fred Berry is in the Department of Bacteriology of the Ohio State Board of Health.

Max Kisliuk was also engaged in the investigation of citrus canker control during the latter part of last year and the past summer and is now graduate assistant in Entomology in Ohio State.

Vera McCoy is Instructor in Bacteriology in Ohio State.

Don C. Mote is at the Ohio Experiment Station at Wooster, Ohio.

Catherine Okey, M.A., '16, is Instructor in Biology in the Western College for Women at Oxford, Ohio.

Dorothy Osborn, B.A., '16, spent six weeks at Cold Spring Harbor during the past summer on a scholarship and is now engaged in investigation of the family history of the inmates of the New Jersey State Reformatory for Women at Clinton, New Jersey.

Max Wershow, D.V.M., '15, is studying medicine in the University of Michigan.

Beta Chapter

Frank B. Cotner, A.B., '15, is assisting in the Botany Department in the University of Michigan. He is doing special research work in Mycology.

E. A. Gallup, M.S., Forestry, is manager of a fruit farm near Ann Arbor. With his wide knowledge of Forestry and Insect pests, we anticipate a successful future for our former President of the Natural Science Club.

E. W. Sink, A.B., M.S., is a sophomore medical student and assistant in the Department of Anatomy in the Medical School at Michigan.

Harold Cummins, A.B., formerly assistant in both the Zoological and Botanical Departments at Michigan, graduated last june with the double honors of receiving both Sigma Xi and Phi Beta Kappa. At present, Mr. Cummins is an Instructor in Histology and Embryology at Vanderbilt University. While an undergraduate at Michigan, Mr. Cummins published "Some Notes on Sarcoptid Mites," printed in the Michigan Academy of Science, and "The Status of Zoological Teaching in Michigan High Schools," printed in Science and Mathematics. Just recently, Prof. Reighard and Mr. Cummins have published an article on "Description of a New Species of the Genus Ichthyonyzon."

Wilber Brotherton, A.B., '16, is an assistant in the Botanical Department at Michigan.